uci engineering

From Vision to Reality

FIELD REPORT NO. 1

FIELD REPORT NO. 2

FIELD REPORT NO. 3

CASTLE BEACH CLUB CONDO

UCI Project No. 0408-121

September 20th, 2004
November 16th, 2004
April 13th, 2005

FIELD REPORT NO. 1

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

FIELD INSPECTION REPORT No. 1

To:	Mr. Leo Gonzalez, President for Castle Beach Club Condo Association	**Report Date:**	September 20th, 2004
From:	Oscar Castells	**Visit Date:**	August 18th, 2004
Project:	CASTLE BEACH CLUB CONDO	**Address:**	5445 Collins Avenue
Proj. No:	0407-121		Miami Beach, Florida
Ref.:	**INFRARED SURVEY OF EXISTING BUSDUCTS AND SWITCHGEAR**		

COMMENTS FROM SURVEY:

1) Main Switchgear Room:
The room is located in the lower lobby level (see Sketch No. 1 attached). Abandoned (not in use) water pipes are existing inside the room, above the electrical panels and bus-ways.

The effect of water old spillages is easily noticed on the three larger circuit breakers (4000A, 4000A and 2500A) that have their exterior covers stained by water. One of the lateral covers of the 2500A circuit breaker was removed and the interior showed no signs of water penetration.

Additionally, the surface temperature of the covers was measured and found to be 88 to 89°F.

There are three bus-ways originating in the main switchgear room (see Sketch No. 1 attached). The surface temperature of each bus-ways was scanned and the results are shown on the attached Sketch No. 1.

The difference in temperatures measured transversally on the 2500A bus-way seems to be caused by Amp/phase unbalance. No Amp measurement could be performed because of the size of the copper bars inside the bus-ways.

The 2500A bus-way cover has an angle heavily rusted (approximately 4' long against approximately 20' inside the main switchgear room).

The two 4000A bus-ways seems to be in acceptable shape, requiring mainly cleaning and painting.

Temperature measurements were performed using an infrared thermometer UEI, INF200, 670 mm wave length and 1mV maximum output.

Cleaning and painting of the devices covers (sometimes even replacement in a minor extent) is obviously required, together with laboratory tests of the functional aspects of the devices (overload and fault tripping for the breakers and isolation level for the bus-ways).

2) Bus-ways outside the Main Switchgear Room

a) Bus-way No. 1: Originates in the 4000A main circuit breaker. Has a total length of approximately 30' and seems to be in good shape along its route to the lobby floor above. Temperatures as measured are OK. See Sketch No. 1. Cleaning and painting required due to the sea proximity.

b) Bus-way No. 2: Originates in the other 4000A main circuit breaker. Has a total length of approximately 30' and seems to be in good shape along its route to the existing MCC behind the main switchgear room on the same lower lobby level. Temperatures as measured are OK. See Sketch No. 1. Cleaning and painting required due to the sea proximity.

c) Bus-way No. 3: Originates in the 2500A main circuit breaker. Has a total length of approximately 300' along its route horizontally to the mechanical room. Then goes down to basement garage and continues horizontally through the garage to the neighborhood of elevator No. 4 and finally goes up to lower lobby level.

Refer to Sketch No 2 to see measured temperatures across the bus-way along its route. In the area in front of the FPL vault this bus-way shows signs of old water leaks. Through slab penetration must be repaired (water proofed) and the covers of the bus-ways must be cleaned and painted.

d.) Bus-way No. 4: Originates in the FPL vault and has a total length of approximately 70' along its route to the storage room right in front of the emergency generator room.

Refer to Sketch No. 2 to see measured temperatures across the bus-way along its route. In the area in front of the FPL vault this bus-way shows signs of old water leaks. Through slab penetration must be repaired (water proofed) and the covers of the bus-ways must be cleaned and painted.

3) Emergency Generator:

The emergency generator room is located in a poorly ventilated room in the basement garage level. The emergency generator cooling system consists in a direct connection to a water main pipe, with no apparent water recirculation.

A two-hour full load test of the generator is recommended to verify the sufficiency of the described cooling system.

4) Motor Control Centers on the Lower Lobby Electromechanical Room

There are three MCC in the electromechanical area in the lower lobby level are. Two of them installed back to back have several cubicles abandoned, and a few cubicles in use but without cover and with wires exposed.

The double MCC has no housekeeping pad and is located nearby to the fire pump and other water pumps. It becomes evident that spillages from the pumps have reached the area of the MCC rusting the lower part of the cabinets and probably leaking down to the lower level through the electrical conduits penetrating through the slab.

It is recommended to build a low bump between the pump area and the MCC areas to content the water in the pump area.

Also the open cubicles must be covered and the through slab penetrations must be water sealed appropriately.

END OF COMMENTS

Encl. Sketch No. 1
Sketch No. 2
Photographs 1 to 12

c:\receptionist\projects\castle beach\field reports\field report no. 1.doc

SKETCH NO. 1

SKETCH NO. 2

PHOTOGRAPHS
(1 – 12)

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

PHOTOGRAPHS

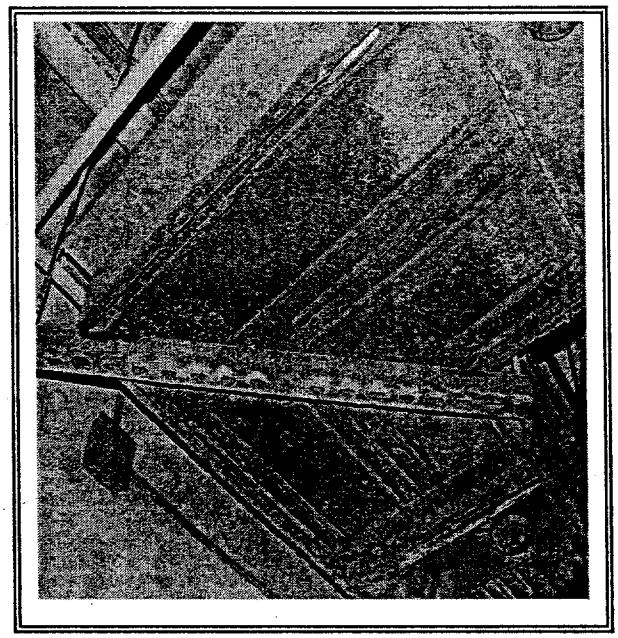


Photo No. 1: Main Switchgear Room
See rust

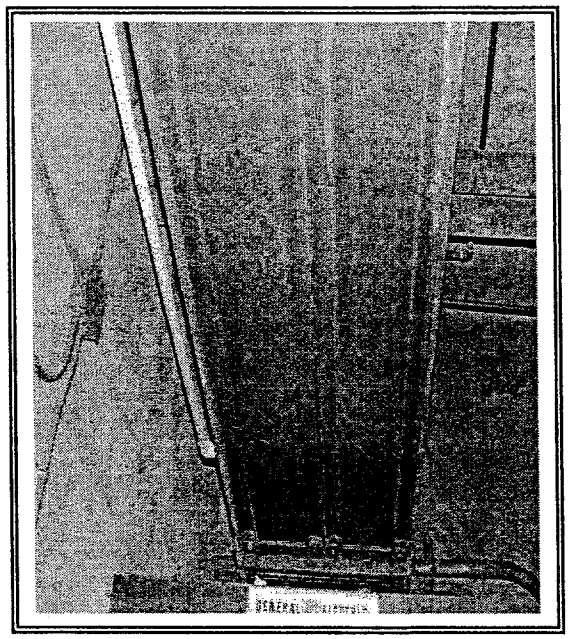


Photo No. 1: Main Switchgear Room

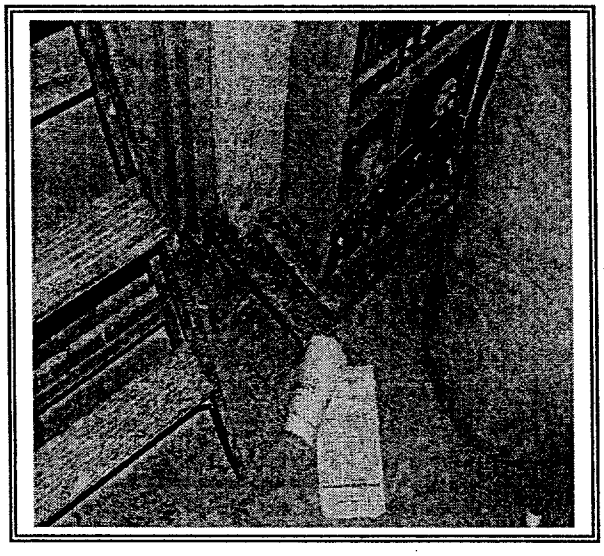


Photo No. 3

Photo No. 4

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

PHOTOGRAPHS

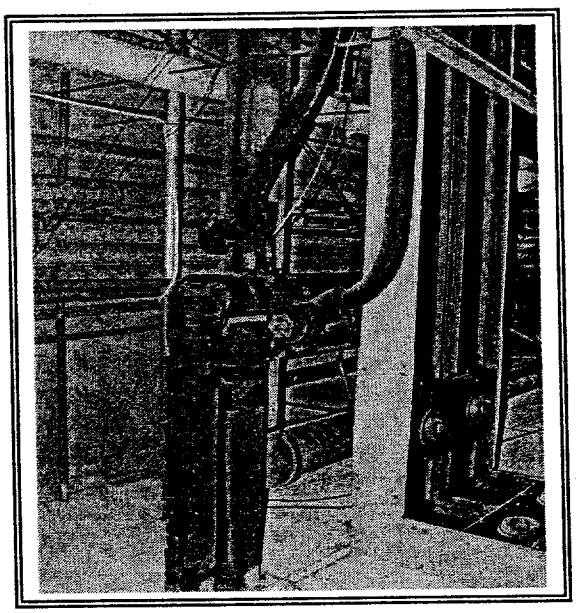


Photo No. 5

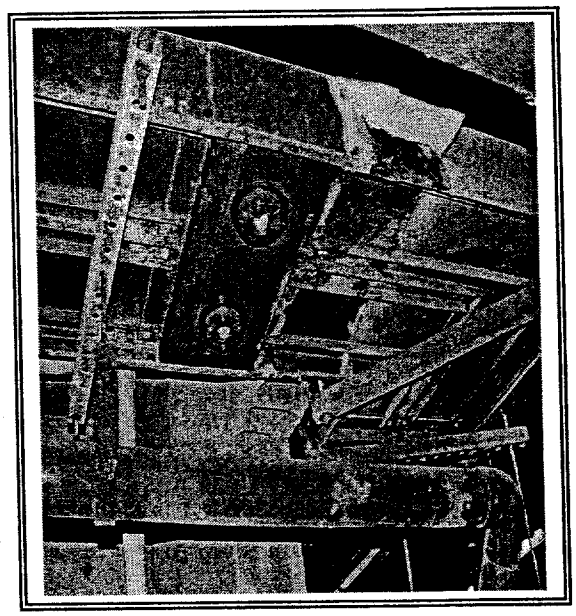


Photo No. 6
See rust and against code installation

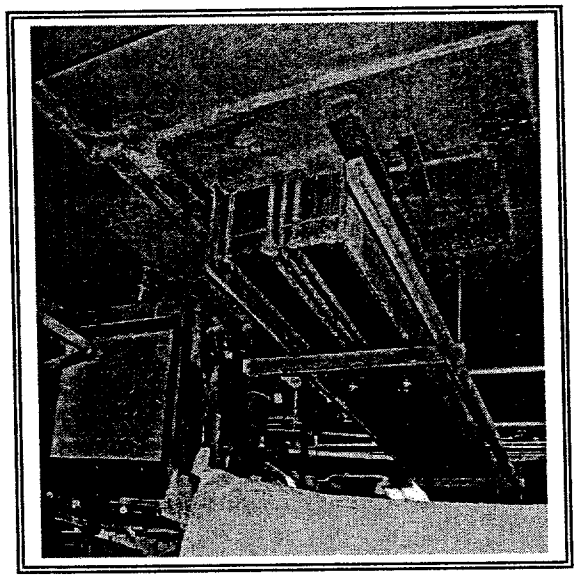


Photo No. 7:
See signs of old leaks

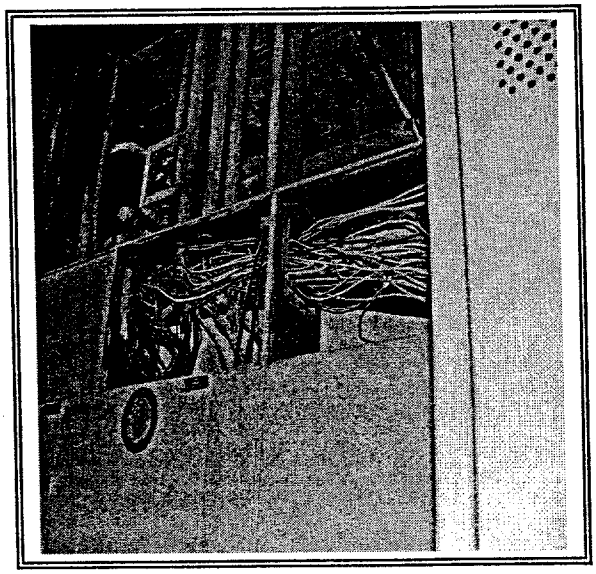


Photo No. 8
Covers required

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

PHOTOGRAPHS

Photo No. 9
Generator Cooling Water Connection

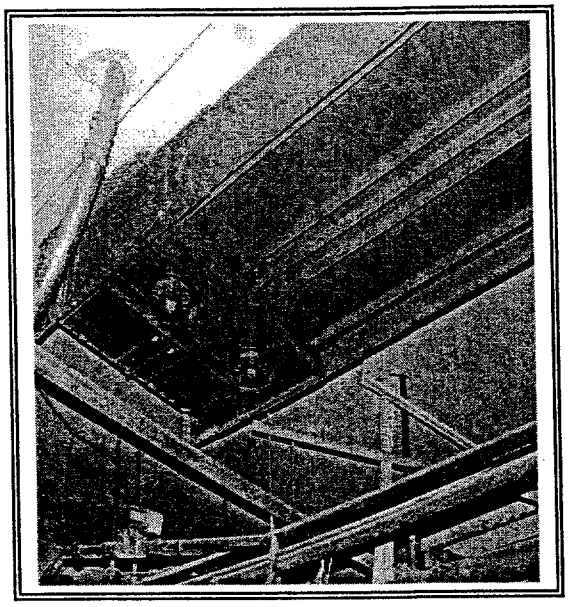


Photo No. 10

Photo No. 11

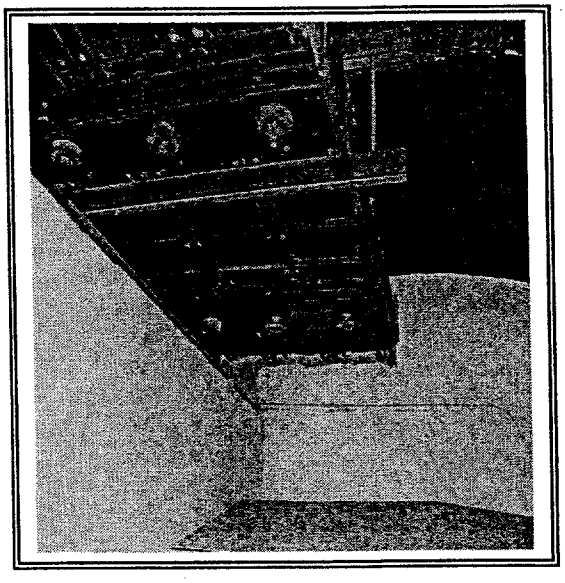


Photo No. 12
See rust signs

FIELD REPORT NO. 2

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

FIELD INSPECTION REPORT No. 2

To:	Mr. Leo Gonzalez	**Report Date:**	November 16th, 2004
From:	Oscar Castells	**Visit Date:**	November 5th, 2004
Project:	CASTLE BEACH CLUB CONDO	**Address:**	5445 Collins Avenue
Proj. No:	0407-121		Miami Beach, Florida
Ref.:	**RECOMMENDATIONS REGARDING EXISTING BUSDUCTS, SWITCHGEAR AND MOTOR CONTROL CENTERS**		

COMMENTS AND RECOMMENDATIONS:

Main Switchgear Room:

1) As stated in the previous field inspection report, the effect of water old spillages is easily noticed on the outside cover of three larger circuit breakers (4000A, 4000A and 2500A).
2) The measurements of surface temperatures done on a previous visit, showed no signs of over-heating in any of the existing breakers (one of them is for emergency service and was not electrically loaded.
3) During this second field visit, further visual inspection was done to the inside of the three mentioned main circuit breakers finding evidence of green stains on the copper buses of two of the switches.
4) Because of the age and present condition of the breakers it is risky to assure, without laboratory testing that they will operate correctly during an overload or short circuit event.
5) The laboratory tests will demand at least, to disconnect the breakers, creating a power-off condition to the Condominium. To minimize the affectations, temporary breakers will need to be installed. Therefore, at the end it will be less expensive and less problematic for the Condo operation, to replace by new ones, the three already mentioned existing main breakers.

Recommendations:

1) To provide new main circuit breakers in the main SWGR room, replacing the existing old ones.
2) To eliminate by demolition and/or re-routing to outside of the main SWGR room, all the existing water pipes (either active or not) presently running above the electrical gear.
3) To seal adequately all ceiling slabs and wall penetrations into the main SWGR room.

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

FIELD INSPECTION REPORT No. 2

Bus-ducts inside and outside of the Main Switchgear Room:

1) As stated in the previous field inspection report, stains and rust (sometimes very heavy) on the outside cover of the installed bus-ducts is easily noticeable in several areas of the existing bus-ducts.
2) The temperature measurements previously done on the bus-ducts outer cover surface, showed no signs of over-heating in general, with two or three points (on connection joints) showing a 10 degrees differential of temperature on points 3 feet apart along the bus.
3) During this second field visit, further visual inspection was done on the outer cover of the bus-ducts, mainly in the parking garage, and while looking from below through construction holes to the inside of the bus-ducts, rust and moisture was easily noticeable.
4) Then at least in the basement, the extent of the rusting inside the bus-ducts could be large, but cannot be determined without disconnecting the power to each bus-duct to then open the cover all along the bus-duct length.
5) The operational conditions of each bus-duct, mainly insulation to ground and insulation between phases, cannot be tested without previously disconnecting the power to then open the covers.
6) Because of the age and present condition of the more than 500 ft length of existing bus-ducts it is risky to assure, without due testing that the rust debris are not creating an insulation decaying process that could end in current leaks and even short circuits risky to the building and its occupants, even more when combined with the un-known operational condition (will they trip if required?) of the circuit breakers in the main SWGR room.

Recommendations:

1) To provide new electrical wire and conduit feeders to replace all the existing bus-duct runs.
2) To remove all the existing bus-ducts runs once replaced.
3) To seal adequately all ceiling slabs penetrations on top of the new conduits runs.
4) Bus-way No.1: Originates in a 4000A circuit breaker. Has a total length of approximately 30ft.
5) Bus-way No.2: Originates in a 4000A main circuit breaker. Has a total length of approximately 30ft.
6) Bus-way No.3:Originates in a 2500A main circuit breaker. Has a total length of approximately 300ft.
7) Bus-way No. 4: Originates in the FPL vault and has a total length of approximately 70' along its route to the storage room right in front of the emergency generator room.

Emergency Generator:

1) The emergency generator room is located in a poorly ventilated room in the basement garage level.
2) The emergency generator cooling system consists in a direct connection to a water main pipe, with no apparent water recirculation.
3) There is no Automatic Transfer Switch (ATS) to automatically detect a power outage, start the generator engine and reconnect to emergency service the required life safety loads.

Recommendations:

1) Perform a load bank test of the generator to evaluate its present condition, including the sufficiency of its existing ventilation and cooling systems.
2) Provide any improvement that may be required as a result of the generator load bank test.
3) Provide an adequate ATS to automatically detect power outages, start the generator engine and transfer the life safety loads from normal to emergency power.

Motor Control Centers (MCC) on the Lower Lobby Electromechanical Room:

1) There are three old MCC in the electromechanical area in the lower lobby level are. Two of them installed back to back have several cubicles abandoned, and a few cubicles in use but without cover and with wires exposed.
2) The double MCC has no housekeeping pad and is located nearby to the fire pump and other water pumps. It is evident that water spillages from the pumps have reached the area of the MCC rusting the lower part of the cabinets and probably leaking down to the lower level through the electrical conduits penetrating through the slab.

Recommendations:

1) To provide new MCC's to replace the existing old ones.
2) To provide 4" high housekeeping pads for each new MCC.
3) To provide a low cement bump to contain water spillages from the fire pump and prevent it to reach the MCC area.

END OF COMMENTS AND RECOMMENDATIONS

Encl. Photographs 1 to 12

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

PHOTOGRAPHS

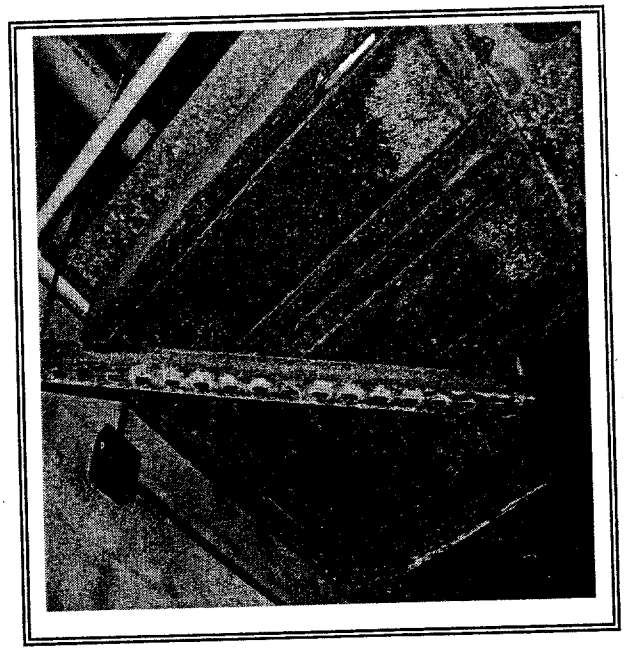


Photo No. 1: Main Switchgear Room
See rust

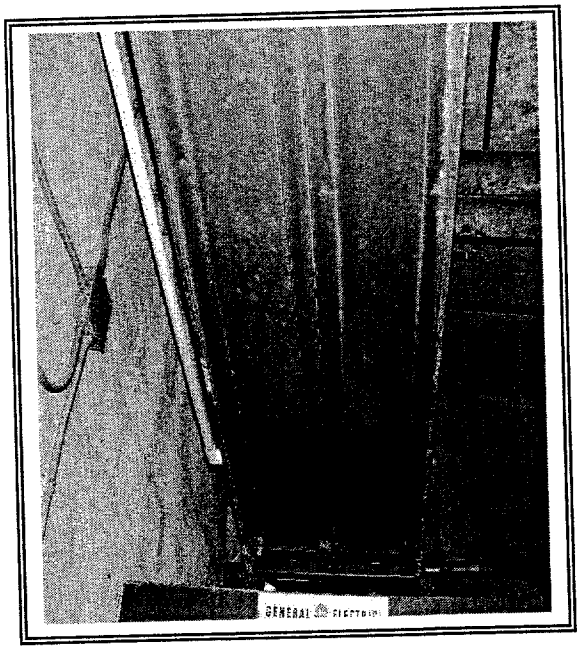


Photo No. 1: Main Switchgear Room

Photo No. 3

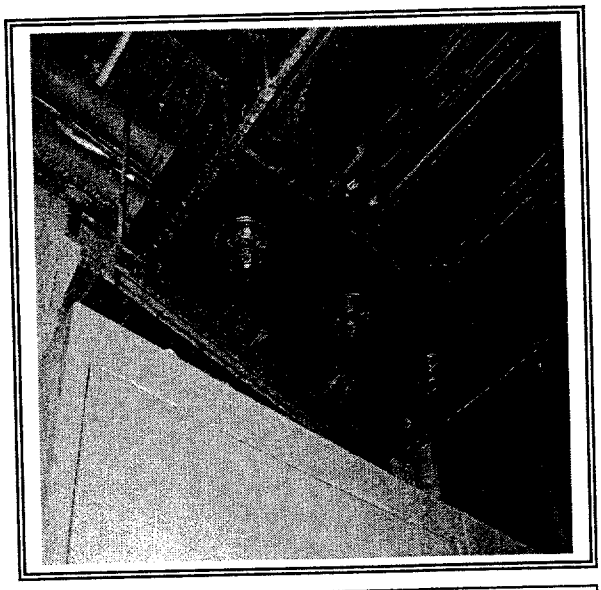
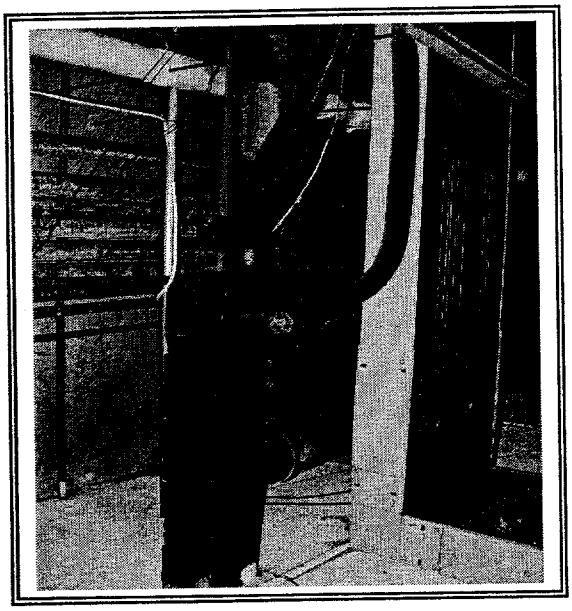


Photo No. 4

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

PHOTOGRAPHS



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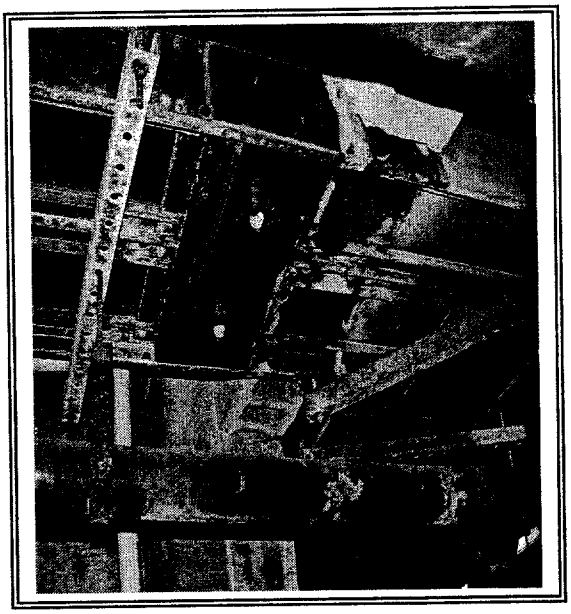
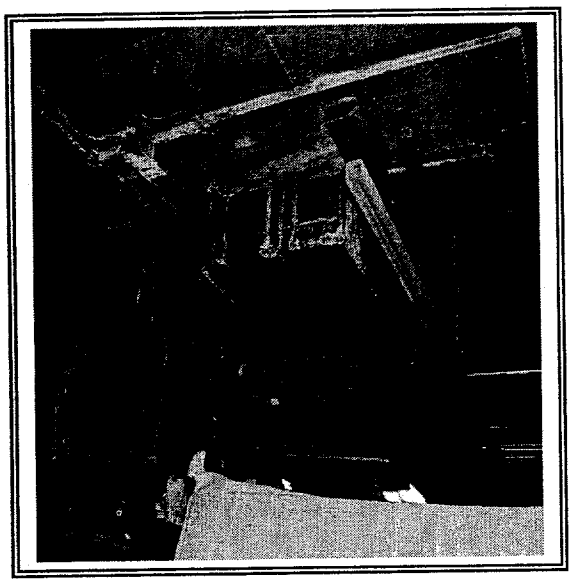


Photo No. 6
See rust and against code installation



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See signs of old leaks

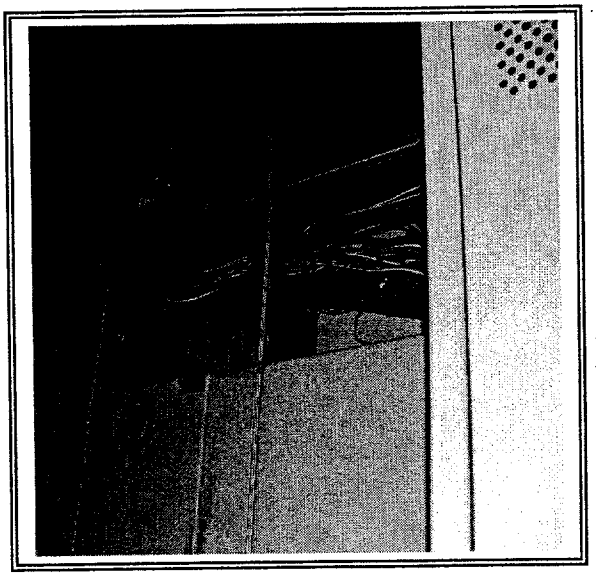
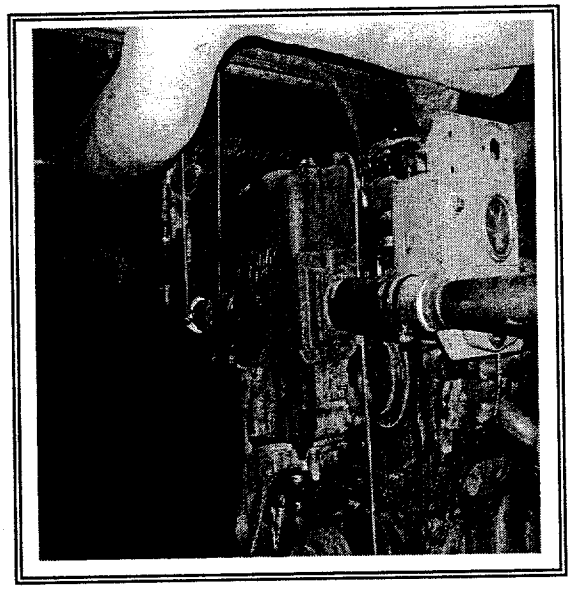


Photo No. 8
Covers required

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

PHOTOGRAPHS



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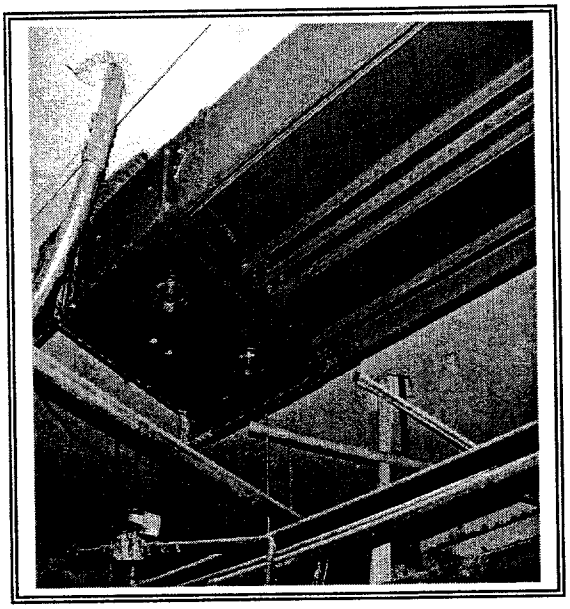
Generator Cooling Water Connection



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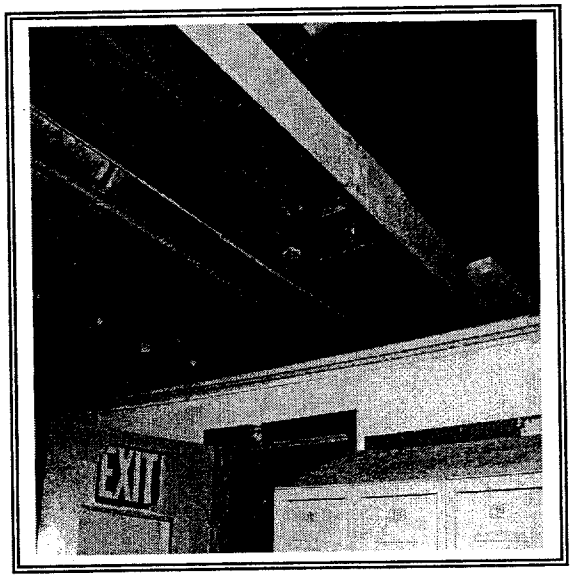

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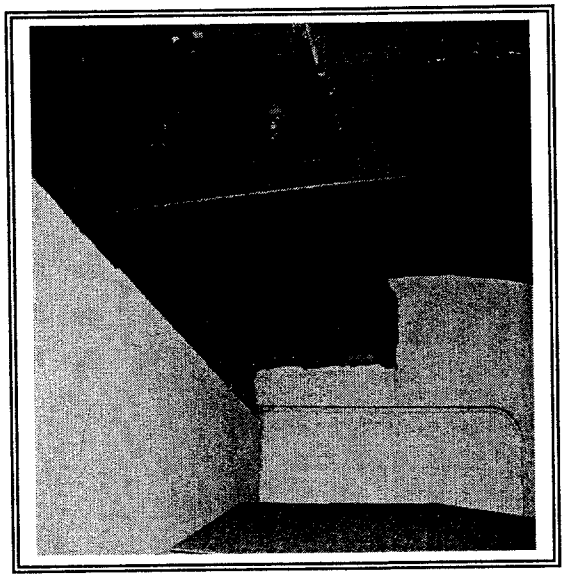


Photo No. 12
See rust signs

FIELD REPORT NO. 3

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

FIELD INSPECTION REPORT No. 3

To:	Mr. Leo Gonzalez	**Report Date:**	April 13th, 2005
From:	Jorge E. Rodriguez	**Visit Date:**	April 11th, 2005
Project:	CASTLE BEACH CLUB CONDO	**Address:**	5445 Collins Avenue Miami Beach, Florida
Proj. No:	0407-121		
Ref.:	**SITE VISIT FOR PROPOSAL**		

The Building Management received a visit of the Miami Beach City Inspector. As a consequence of this visit there was a report questioning the condition of the existing electrical installation. A copy will be sent to UCI shortly. There are no drawings available for review.

During this visit I had the opportunity of meeting with:

	Phone	Mobile
• Emilio (Bebo) Berkowitz	(305) 867-9065	(305) 968-1053
• Leopoldo (Leo) Gonzalez	(305) 867-8311	(305) 772-5117
• Horacio Mecozzi	(305) 993-3927	

Mr. Horacio Mecozzi is the contact person for technical matters.

The Owner is requesting an electrical study to verify that the existing circuits for every tenant are in compliance with Code. The tenant units are being fed from panelboards located outside the units in the corridors (two panels in South wing and two in North wing). It seems that there is a switch in the switchboard serving two floors (8 panels) (68 units in total for such circuit). The existing feeder from such circuit breaker in the switchboard is 350 KCM. AL THW. Neutral is 4/0.

The typical circuit layout for every unit is as follows:

- One circuit for refrigerator (to confirm) ..... 300 VA
- Microwave ..... 600 VA
- Coffee maker ..... 1,000 VA
- Lights/TV ..... 600 VA

The Owner wishes to find out about the possibility of adding two new circuits: one for a 2 pos. range (no oven) and one for a blower dryer in the bathroom. It seems these two circuits would

require additional feeder capacity (the feeder serving the panelboards for the floors). Furthermore, it would require verification of the FPL service entrance capacity.

The Management is requesting a proposal for an electrical study to confirm existing conditions and to determine what is needed to bring circuits to code as necessary. Additionally, it is to determine the feasibility of the two new circuits per tenant unit. The second part of the proposal would include the design and installation state.

The proposal is to be sent to:

CASTLE BEACH CONDOMINIUM ASSOCIATION
5445 Collins Avenue
Miami Beach, Florida 33140
Attn.: Mrs. Tati Barriga

END OF REPORT

Cc/ Jan Pierre Perez
Tati Barriga

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

FIELD INSPECTION REPORT No. 2

To:	Mr. Leo Gonzalez	Report Date:	November 16th, 2004
From:	Oscar Castells	Visit Date:	November 5th, 2004
Project:	CASTLE BEACH CLUB CONDO	Address:	5445 Collins Avenue Miami Beach, Florida
Proj. No:	0407-121		
Ref.:	**RECOMMENDATIONS REGARDING EXISTING BUSDUCTS, SWITCHGEAR AND MOTOR CONTROL CENTERS**		

COMMENTS AND RECOMMENDATIONS:

Main Switchgear Room:

1) As stated in the previous field inspection report, the effect of water old spillages is easily noticed on the outside cover of three larger circuit breakers (4000A, 4000A and 2500A).
2) The measurements of surface temperatures done on a previous visit, showed no signs of over-heating in any of the existing breakers (one of them is for emergency service and was not electrically loaded.
3) During this second field visit, further visual inspection was done to the inside of the three mentioned main circuit breakers finding evidence of green stains on the copper buses of two of the switches.
4) Because of the age and present condition of the breakers it is risky to assure, without laboratory testing that they will operate correctly during an overload or short circuit event.
5) The laboratory tests will demand at least, to disconnect the breakers, creating a power-off condition to the Condominium. To minimize the affectations, temporary breakers will need to be installed. Therefore, at the end it will be less expensive and less problematic for the Condo operation, to replace by new ones, the three already mentioned existing main breakers.

Recommendations:

1) To provide new main circuit breakers in the main SWGR room, replacing the existing old ones.
2) To eliminate by demolition and/or re-routing to outside of the main SWGR room, all the existing water pipes (either active or not) presently running above the electrical gear.
3) To seal adequately all ceiling slabs and wall penetrations into the main SWGR room.

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

FIELD INSPECTION REPORT No. 2

Bus-ducts inside and outside of the Main Switchgear Room:

1) As stated in the previous field inspection report, stains and rust (sometimes very heavy) on the outside cover of the installed bus-ducts is easily noticeable in several areas of the existing bus-ducts.
2) The temperature measurements previously done on the bus-ducts outer cover surface, showed no signs of over-heating in general, with two or three points (on connection joints) showing a 10 degrees differential of temperature on points 3 feet apart along the bus.
3) During this second field visit, further visual inspection was done on the outer cover of the bus-ducts, mainly in the parking garage, and while looking from below through construction holes to the inside of the bus-ducts, rust and moisture was easily noticeable.
4) Then at least in the basement, the extent of the rusting inside the bus-ducts could be large, but cannot be determined without disconnecting the power to each bus-duct to then open the cover all along the bus-duct length.
5) The operational conditions of each bus-duct, mainly insulation to ground and insulation between phases, cannot be tested without previously disconnecting the power to then open the covers.
6) Because of the age and present condition of the more than 500 ft length of existing bus-ducts it is risky to assure, without due testing that the rust debris are not creating an insulation decaying process that could end in current leaks and even short circuits risky to the building and its occupants, even more when combined with the un-known operational condition (will they trip if required?) of the circuit breakers in the main SWGR room.

Recommendations:

1) To provide new electrical wire and conduit feeders to replace all the existing bus-duct runs.
2) To remove all the existing bus-ducts runs once replaced.
3) To seal adequately all ceiling slabs penetrations on top of the new conduits runs.
4) Bus-way No.1: Originates in a 4000A circuit breaker. Has a total length of approximately 30ft.
5) Bus-way No.2: Originates in a 4000A main circuit breaker. Has a total length of approximately 30ft.
6) Bus-way No.3:Originates in a 2500A main circuit breaker. Has a total length of approximately 300ft.
7) Bus-way No. 4: Originates in the FPL vault and has a total length of approximately 70' along its route to the storage room right in front of the emergency generator room.

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

FIELD INSPECTION REPORT No. 2

Emergency Generator:

1) The emergency generator room is located in a poorly ventilated room in the basement garage level.
2) The emergency generator cooling system consists in a direct connection to a water main pipe, with no apparent water recirculation.
3) There is no Automatic Transfer Switch (ATS) to automatically detect a power outage, start the generator engine and reconnect to emergency service the required life safety loads.

Recommendations:

1) Perform a load bank test of the generator to evaluate its present condition, including the sufficiency of its existing ventilation and cooling systems.
2) Provide any improvement that may be required as a result of the generator load bank test.
3) Provide an adequate ATS to automatically detect power outages, start the generator engine and transfer the life safety loads from normal to emergency power.

Motor Control Centers (MCC) on the Lower Lobby Electromechanical Room:

1) There are three old MCC in the electromechanical area in the lower lobby level are. Two of them installed back to back have several cubicles abandoned, and a few cubicles in use but without cover and with wires exposed.
2) The double MCC has no housekeeping pad and is located nearby to the fire pump and other water pumps. It is evident that water spillages from the pumps have reached the area of the MCC rusting the lower part of the cabinets and probably leaking down to the lower level through the electrical conduits penetrating through the slab.

Recommendations:

1) To provide new MCC's to replace the existing old ones.
2) To provide 4" high housekeeping pads for each new MCC.
3) To provide a low cement bump to contain water spillages from the fire pump and prevent it to reach the MCC area.

END OF COMMENTS AND RECOMMENDATIONS

Encl. Photographs 1 to 12

UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

PHOTOGRAPHS

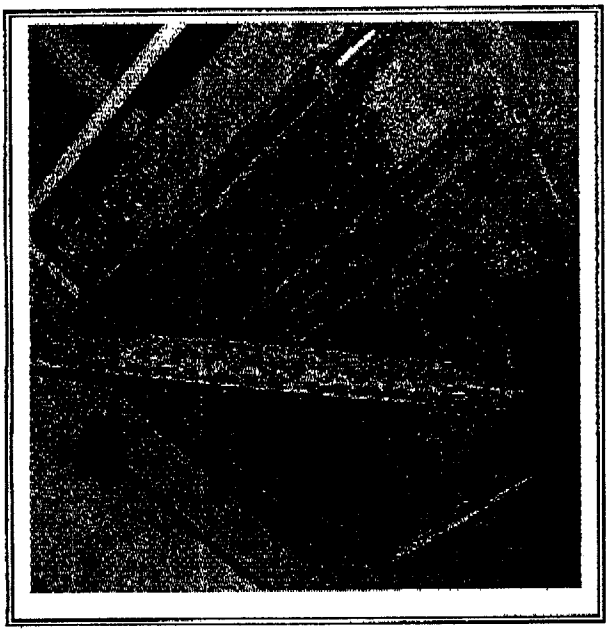
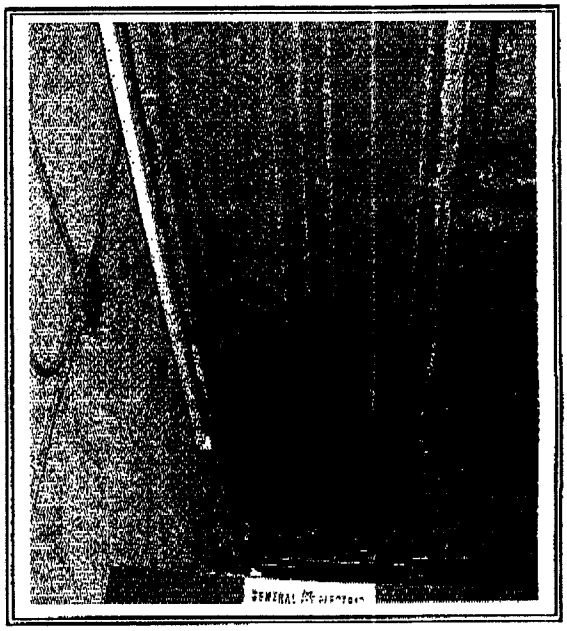


Photo No. 1: Main Switchgear Room
See rust



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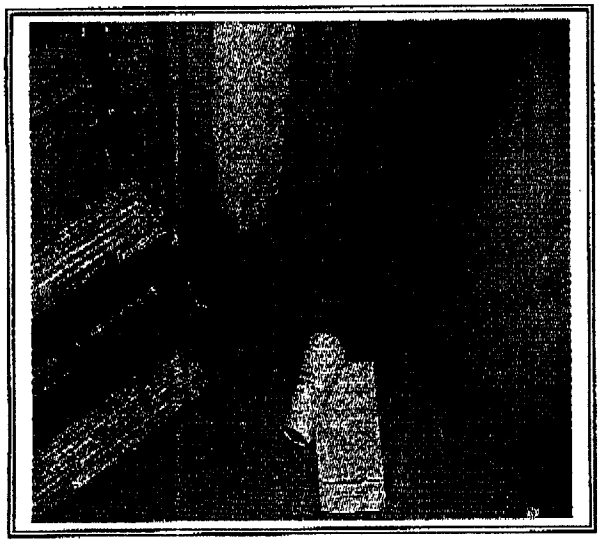

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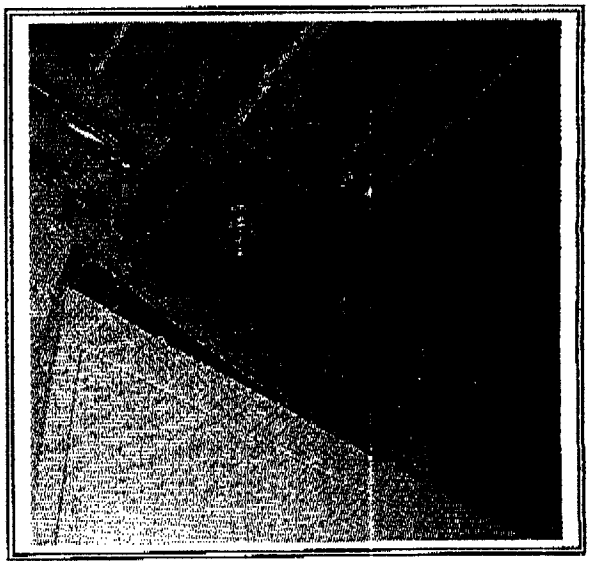

Photo No. 4

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PHOTOGRAPHS

Photo No. 5

Photo No. 6
See rust and against code installation

Photo No. 7:
See signs of old leaks

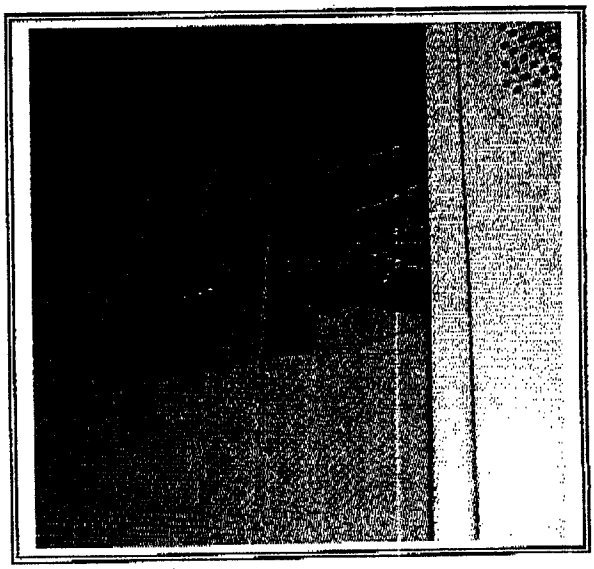

Photo No. 8
Covers required

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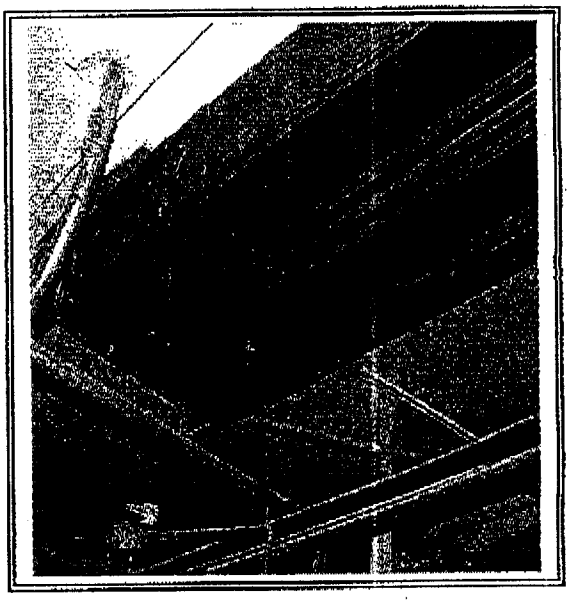
PHOTOGRAPHS

Photo No. 9
Generator Cooling Water Connection



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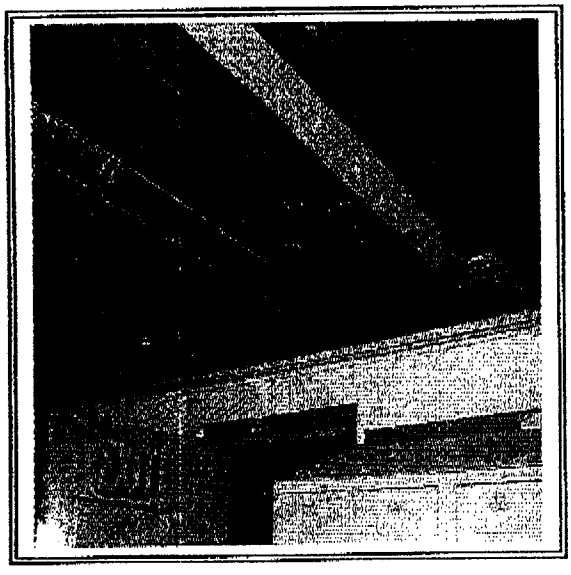

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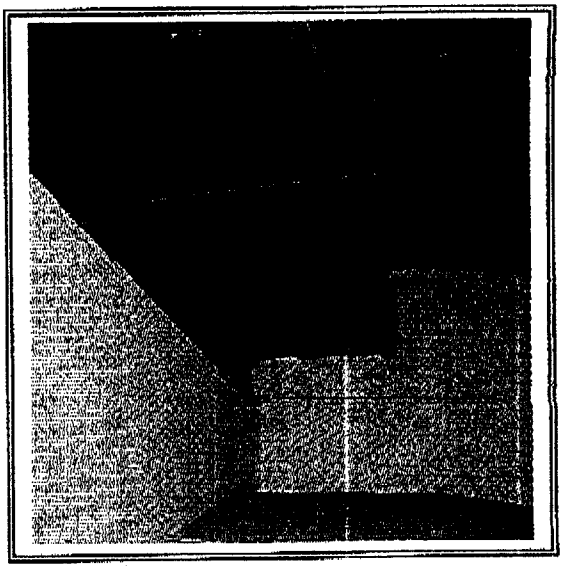
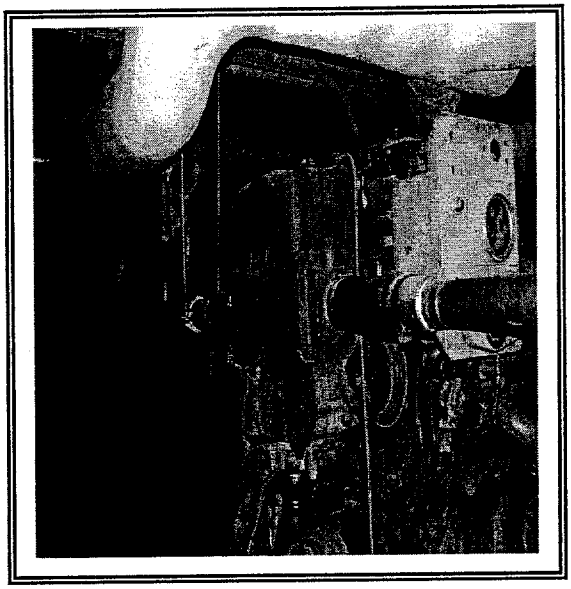


Photo No. 12
See rust signs

PHOTOGRAPHS



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Generator Cooling Water Connection

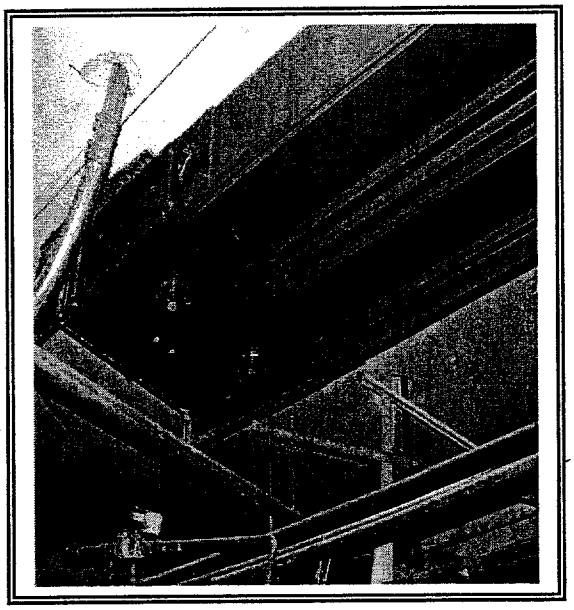

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Photo No. 11

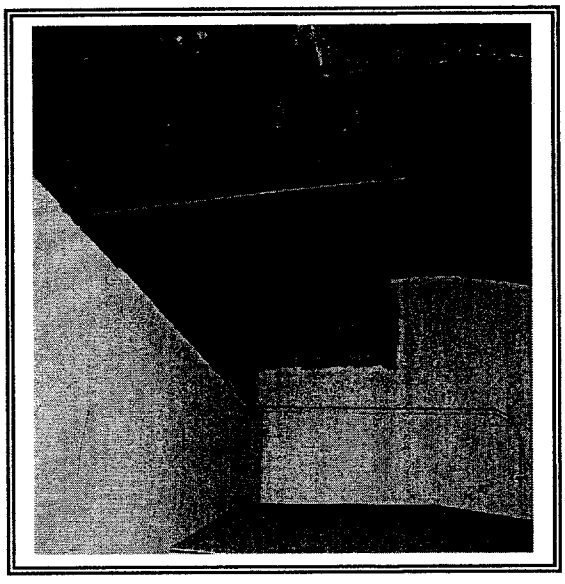

Photo No. 12
See rust signs

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PHOTOGRAPHS

Photo No. 5

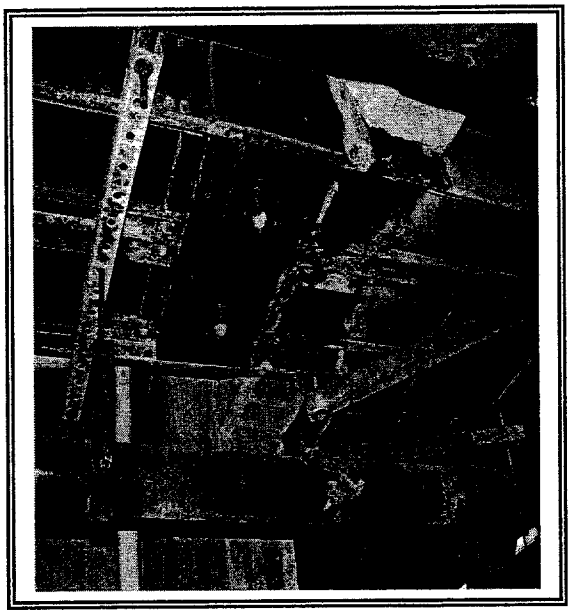

Photo No. 6
See rust and against code installation

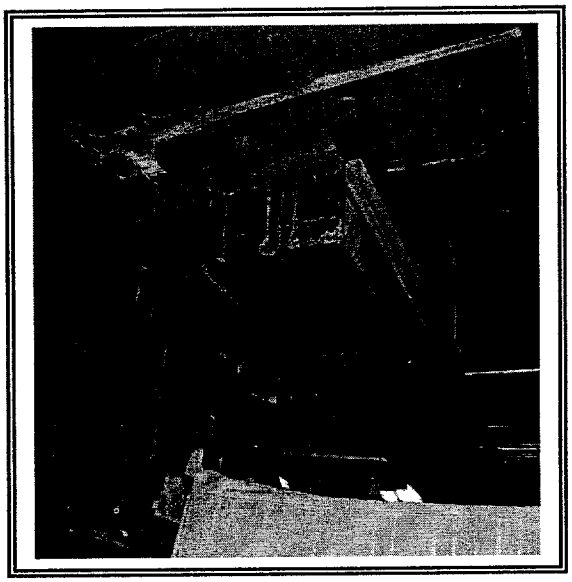

Photo No. 7:
See signs of old leaks

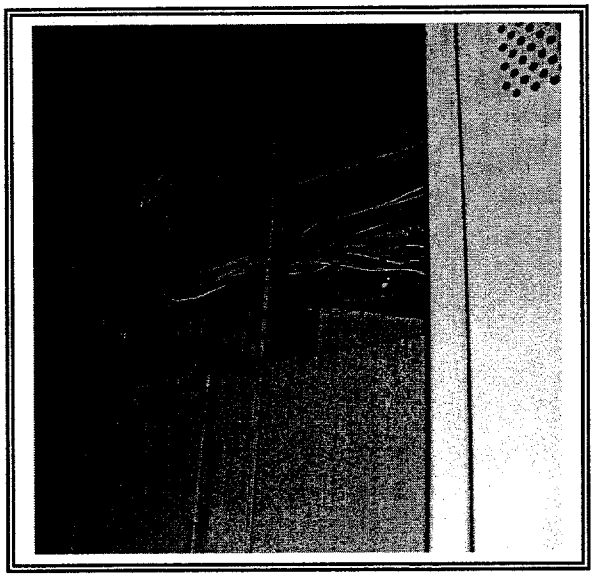

Photo No. 8
Covers required

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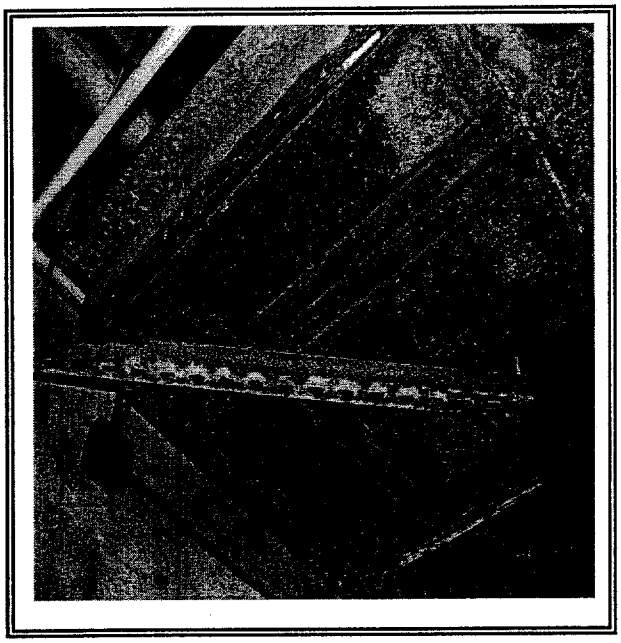


Photo No. 1: Main Switchgear Room
See rust

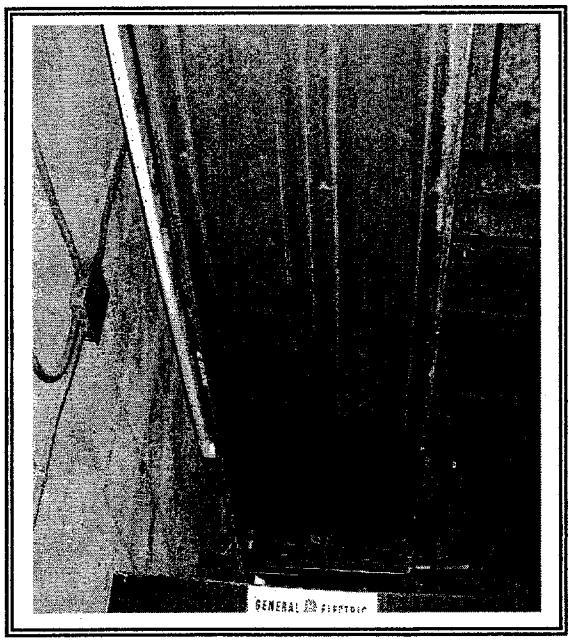
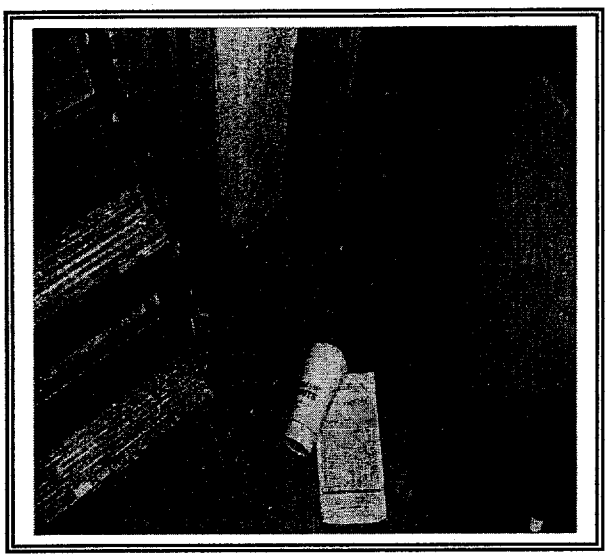


Photo No. 1: Main Switchgear Room



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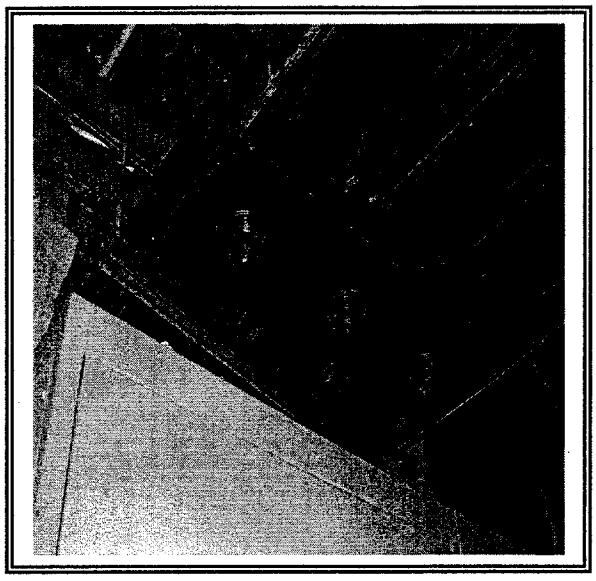

Photo No. 4